

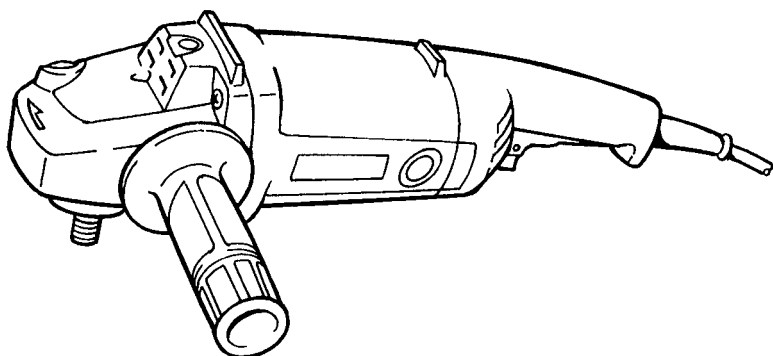
# Makita

アメリカ

## Angle Sander

MODEL 9060L

### INSTRUCTION MANUAL



DOUBLE  
INSULATION

#### SPECIFICATIONS

| No load speed<br>(RPM) | Overall length | Net weight       | Spindle thread |
|------------------------|----------------|------------------|----------------|
| 6,000                  | 458 mm (18")   | 4.2 kg (9.3 lbs) | 5/8" – 11 UNC  |

\* Manufacturer reserves the right to change specifications without notice.

\* Note: Specifications may differ from country to country.

WARNING: For your personal safety, READ and UNDERSTAND before using.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

# GENERAL SAFETY RULES

(For All Tools)

**WARNING!** Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

## SAVE THESE INSTRUCTIONS. READ ALL INSTRUCTIONS.

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.
4. **Double Insulated tools are equipped with a polarized plug (one blade is wider than the other.) This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double insulation  eliminates the need for the three wire grounded power cord and grounded power supply system.
5. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.
6. **Don't expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
7. **Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electric shock.
8. **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W."** These cords are rated for outdoor use and reduce the risk of electric shock.
9. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
10. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.

11. **Avoid accidental starting. Be sure switch is off before plugging in.** Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents.
12. **Remove adjusting keys or switches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
13. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
14. **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.
15. **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
16. **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
17. **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
18. **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
19. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
20. **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
21. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
22. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool, may become hazardous when used on another tool.
23. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
24. **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.

## ***Specific Safety Rules***

1. **Always use proper guard with grinding wheel.** A guard protects operator from broken wheel fragments.
2. **Accessories must be rated for at least the speed recommended on the tool warning label.** Wheels and other accessories running over rated speed can fly apart and cause injury.
3. **Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord.** Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.
4. **Keep guards in place.**
5. **Use only wheels having a maximum operating speed at least as high as "No Load RPM" marked on the tool's nameplate.** When using depressed center wheels, be sure to use only fiberglass-reinforced wheels.
6. **Check the wheel carefully for cracks or damage before operation.** Replace cracked or damaged wheel immediately.
7. **Use only flanges specified for this tool.**
8. **Be careful not to damage the spindle, the flange (especially the installing surface) or the lock nut.** Damage to these parts could result in wheel breakage.
9. **Hold the tool firmly.**
10. **Keep hands away from rotating parts.**
11. **Make sure the wheel is not contacting the workpiece before the switch is turned on.**
12. **Before using the tool on an actual workpiece, let it run for a while. Watch for vibration or wobbling that could indicate poor installation or a poorly balanced wheel.**
13. **Use the specified surface of the wheel to perform the grinding.**
14. **Watch out for flying sparks.** Hold the tool so that sparks fly away from you and other persons or flammable materials.
15. **Do not leave the tool running.** Operate the tool only when hand-held.
16. **Do not touch the workpiece immediately after operation; it may be extremely hot and could burn your skin.**
17. **Check the backing pad carefully for cracks, damage or deformity before operation.** Replace cracked, damaged or deformed pad immediately.
18. **Hold the tool firmly.**
19. **Keep hands away from rotating parts.**
20. **Make sure abrasive disc is not contacting the workpiece before the switch is turned on.**
21. **Do not leave the tool running.** Operate the tool only when hand-held.
22. **Do not touch the workpiece immediately after operation; it may be extremely hot and could burn your skin.**

**SAVE THESE INSTRUCTIONS.**

# SYMBOLS

The followings show the symbols used for tool.

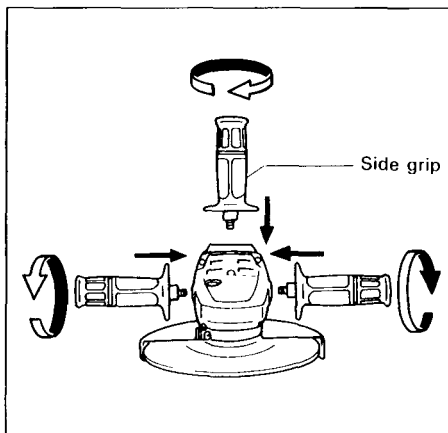
|                                                                                     |                                               |
|-------------------------------------------------------------------------------------|-----------------------------------------------|
| V                                                                                   | ..... volts                                   |
| A                                                                                   | ..... amperes                                 |
| Hz                                                                                  | ..... herts                                   |
| kg                                                                                  | ..... kilograms                               |
| h                                                                                   | ..... hours                                   |
| min                                                                                 | ..... minutes                                 |
| s                                                                                   | ..... seconds                                 |
|    | ..... alternating current                     |
|    | ..... direct current                          |
| $n_0$                                                                               | ..... no load speed                           |
|    | ..... alternating or direct current           |
|    | ..... Class II Construction                   |
|    | ..... splash-proof construction               |
|    | ..... watertight construction                 |
| .../min                                                                             | ..... revolutions or reciprocation per minute |
|  | ..... number of blow                          |

### Installing side grip (auxiliary handle)

#### CAUTION:

Always be sure that the tool is switched off and unplugged before installing or removing the side grip.

Always install the side grip on the tool securely before operation. The side grip can be installed in any of three positions on the sides of the tool, whichever is convenient and keeps the guard properly positioned. Always hold the tool's switch handle and the side grip firmly with both hands during operation.



#### WARNING:

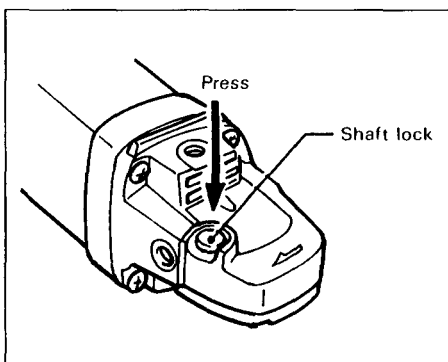
Install the side grip only in such a way that grinding wheel will not contact any part of your body and that wheel guard always remains positioned as a barrier between the grinding wheel and the operator. Failure to do so may result in serious injury.

### Shaft lock

Press the shaft lock to prevent spindle rotation when installing or removing accessories.

#### CAUTION:

Never actuate the shaft lock when the spindle is moving. The tool may be damaged.



### Installing or removing abrasive disc

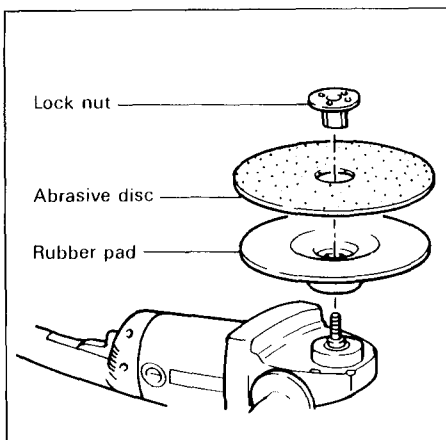
#### CAUTION:

Always be sure that the tool is switched off and unplugged before installing or removing the disc.

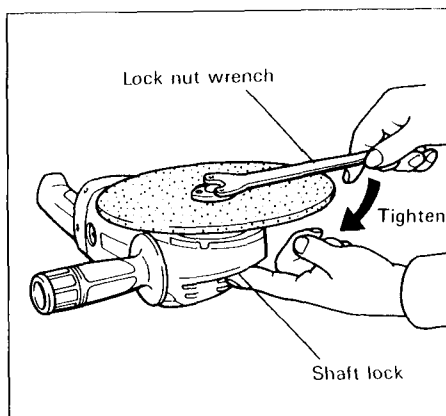
#### NOTE:

Use sander accessories specified in this manual. These must be purchased by separate.

Mount the rubber pad onto the spindle. Fit the disc on over the rubber pad and screw the lock nut onto the spindle.



To tighten the lock nut, press the shaft lock firmly so that the spindle cannot revolve, then use the lock nut wrench and securely tighten clockwise.



To remove the disc, follow the installation procedure in reverse.

## IF USED AS A GRINDER

### NOTE:

Use grinder accessories specified in this manual. These must be purchased by separate.

### WARNING:

Always use guard assembly or accessory kit, noted below, for type 27 depressed center wheel.

#### Guard assembly

Part No. 192578-8 ... For 180 mm (7'')

Part No. 192588-5 ... For 230 mm (9'')

#### Guard accessory kit

Part No. 192606-9 ... For 180 mm (7'')

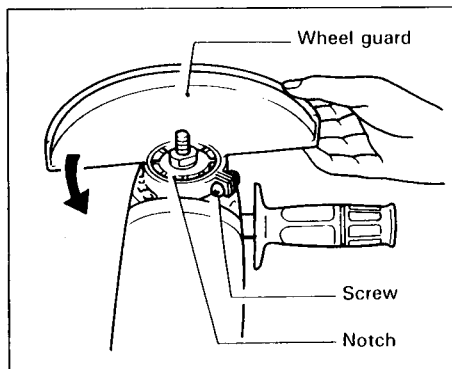
Part No. 192607-7 ... For 230 mm (9'')

## Installing wheel guard

### CAUTION:

Always be sure that the tool is switched off and unplugged before installing or removing the wheel guard.

When using a depressed center wheel or an abrasive cut-off wheel, always use a wheel guard. Mount the wheel guard with the tab on the wheel guard band aligned with the notch on the bearing box. Then rotate the wheel guard 160 degrees counterclockwise. Be sure to tighten the screw securely.

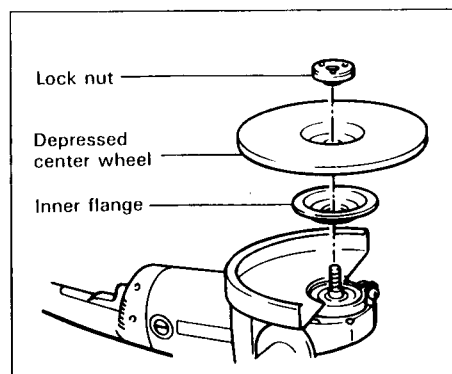


## Installing or removing depressed center wheel

### CAUTION:

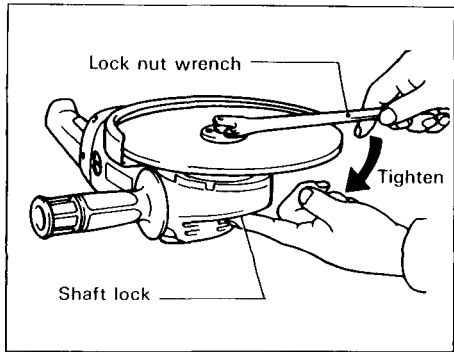
Always be sure that the tool is switched off and unplugged before installing or removing the wheel.

Mount the inner flange onto the spindle. Fit the wheel on over the inner flange and screw the lock nut onto the spindle.



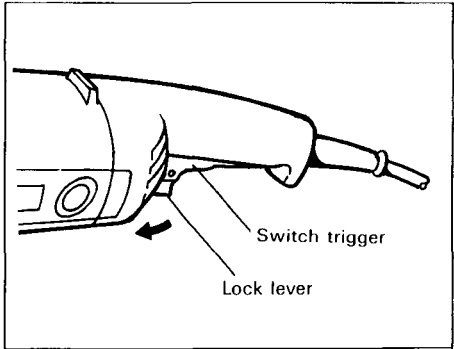
To tighten the lock nut, press the shaft lock firmly so that the spindle cannot revolve, then use the lock nut wrench and securely tighten clockwise.

To remove the wheel, follow the installation procedure in reverse.



### Switch action

To start the tool, simply pull the trigger. Release the trigger to stop. For continuous operation, pull the trigger and then push in the lock lever. To stop the tool from the locked position, pull the trigger fully, then release it.



### CAUTION:

Before plugging in the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.

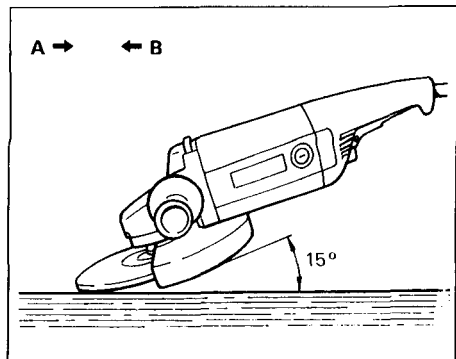
### Operation

#### CAUTION:

After use, always switch off and wait for the wheel to come to a complete stop before placing the tool down.

Hold the tool firmly. Turn the tool on and then apply the wheel or disc to the workpiece. In general, keep the edge of the wheel or disc at an angle of about 15° to the workpiece surface.

*During the break-in period with a new wheel, do not work the grinder in the B direction or it will cut into the workpiece. Once the edge of the wheel has been rounded off by use, the wheel may be worked in both A and B directions.*



**WARNING:**

- It should never be necessary to force the tool. The weight of the tool applies adequate pressure. Forcing and excessive pressure could cause dangerous wheel breakage.
- Continued use of a worn-out wheel may result in wheel explosion and serious personal injury. Depressed center wheel should not be used after it has been worn down to 115 mm (4-1/2") in diameter. Use of the wheel after this point is unsafe and it should be removed from service and rendered unusable by intentional destruction.

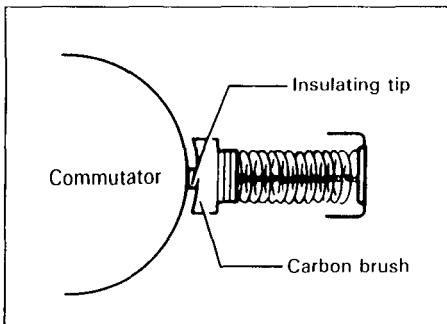
## MAINTENANCE

### CAUTION:

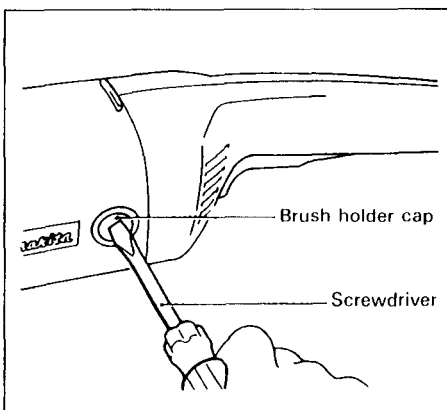
Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

### Replacing carbon brushes

When the resin insulating tip inside the carbon brush is exposed to contact the commutator, it will automatically shut off the motor. When this occurs, both carbon brushes should be replaced at the same time. Use only identical carbon brushes.



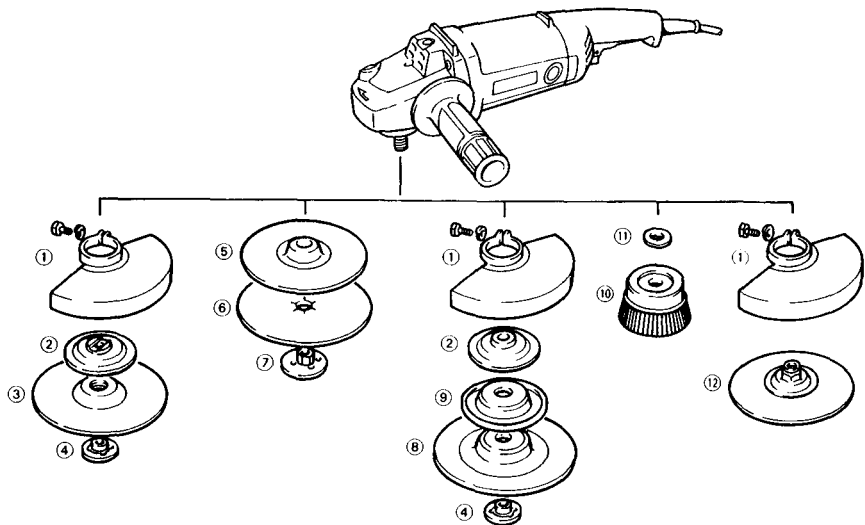
Use a screwdriver to remove the brush holder caps. Take out the worn carbon brushes, insert the new ones and secure the brush holder caps.



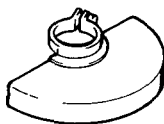
To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by Makita Authorized or Factory Service Centers, always using Makita replacement parts.

# ACCESSORIES

**CAUTION:**  
These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. The accessories or attachments should be used only in the proper and intended manner.



① Wheel guard



| Part No. | Size (mm) |
|----------|-----------|
| 165191-5 | 180 (7")  |
| 164879-4 | 230 (9")  |

③ Depressed center wheel (1 per pkg)



| Part No. | Grit | Size (mm)                          |
|----------|------|------------------------------------|
| 741425-6 | 24   | 180 x 6 x 22<br>(7" x 1/4" x 7/8") |
| 741421-4 | 24   | 230 x 6 x 22<br>(9" x 1/4" x 7/8") |

② Inner flange 89  
(For depressed center wheel)  
Part No. 224317-9



④ Lock nut 5/8" - 40  
(For depressed center wheel)  
Part No. 224509-0



- ⑤ **Rubber pad**  
Part No. 743012-7



- ⑦ **Sanding lock nut 48**  
(For abrasive disc)  
Part No. 224517-1



- ⑩ **Wire cup brush**



| Part No. | Diameter (mm) |
|----------|---------------|
| 743206-A | 150 (6")      |
| 743206-B |               |

- ⑪ **Urethane washer 14**  
Part No. 261039-0



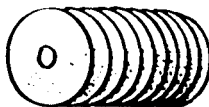
When using wire brush, mount urethane washer 14 to the spindle. It will make it easier to remove wire brush.

- ⑫ **Hubbed grinding wheel**



| Part No. | Grit | Size             |
|----------|------|------------------|
| 741414-A | A24R | 7" x 1/4" x 5/8" |
| 741415-A | A24R | 9" x 1/4" x 5/8" |

- ⑥ **Abrasive disc (5 per pkg)**



| Part No.   | Grit | Diameter (mm) |
|------------|------|---------------|
| 742067-A-5 | 16   | 180 (7")      |
| 742069-A-5 | 24   |               |
| 742089-A-5 | 36   |               |
| 742070-A-5 | 50   |               |
| 742071-A-5 | 80   |               |
| 742091-A-5 | 120  |               |

- ⑧ **Flexible grinding wheel (10 per pkg)**



| Part No. | Grit | Size (mm)                                                                                |
|----------|------|------------------------------------------------------------------------------------------|
| 741445-0 | 36   | 180 x 3 x 22<br>(7" x 1/8" x 7/8")<br>(includes one back up pad, ⑨<br>Part No. 743027-4) |
| 741441-8 | 46   |                                                                                          |
| 741442-6 | 60   |                                                                                          |
| 741443-4 | 80   |                                                                                          |
| 741444-2 | 120  |                                                                                          |

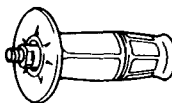
- ⑨ **Plastic pad**  
Part No. 743027-4



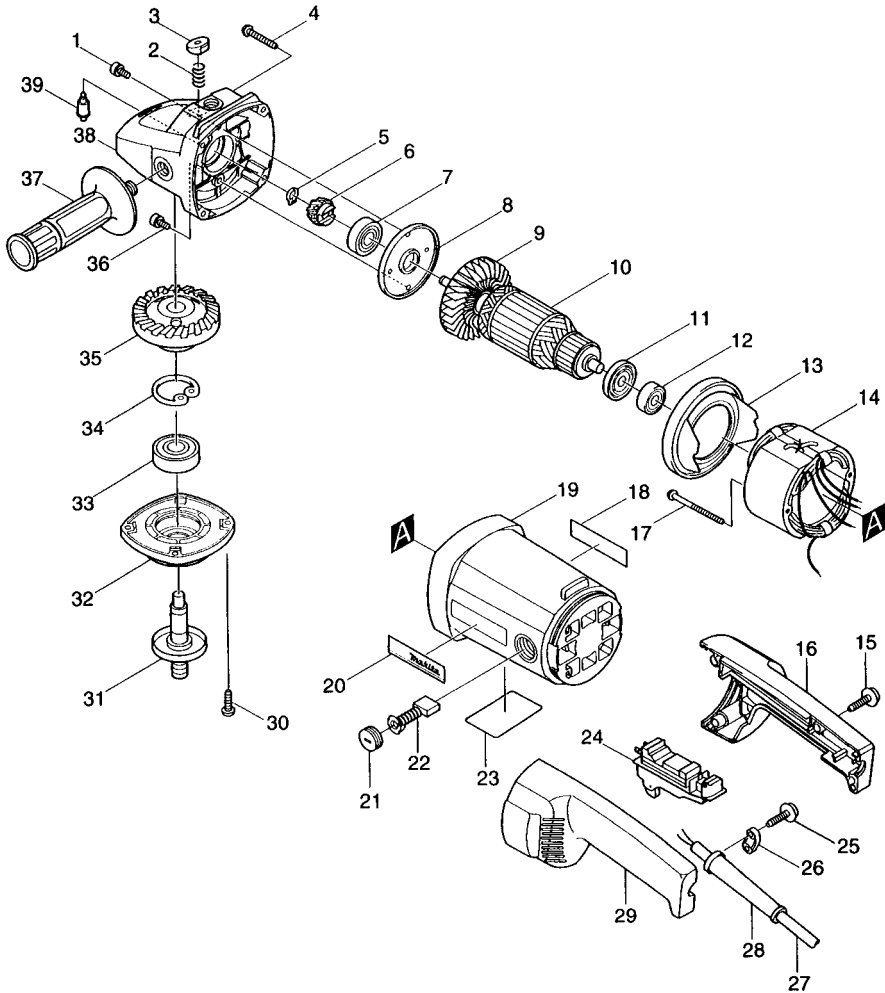
- **Lock nut wrench 28**  
Part No. 782412-6



- **Grip 36**  
Part No. 152539-0



# **ANGLE SANDER Model 9060L**



Note: The switch and other part configurations may differ from country to country.

| ITEM<br>NO. | NO.<br>USED | DESCRIPTION                                 | ITEM<br>NO. | NO.<br>USED | DESCRIPTION                 |
|-------------|-------------|---------------------------------------------|-------------|-------------|-----------------------------|
| MACHINE     |             |                                             | MACHINE     |             |                             |
| 1           | 1           | Hex. Socket Head Bolt M5x10                 | 20          | 1           | Makita Label                |
| 2           | 1           | Compression Spring 12                       | 21          | 2           | Brush Holder Cap            |
| 3           | 1           | Pin Cap                                     | 22          | 2           | A.C. Carbon Brush           |
| 4           | 4           | Tapping Screw 5x35                          | 23          | 1           | Name Plate                  |
| 5           | 1           | Retaining Ring S-9                          | 24          | 1           | Switch                      |
| 6           | 1           | Spiral Bevel Gear 12                        | 25          | 2           | Tapping Screw 4x18          |
| 7           | 1           | Ball Bearing 6301DDW                        | 26          | 1           | Strain Relief               |
| 8           | 1           | Bearing Retainer 57                         | 27          | 1           | Cord                        |
| 9           | 1           | Fan 80                                      | 28          | 1           | Cord Guard                  |
| 10          | 1           | ARMATURE ASSEMBLY<br>(With Item 9, 11 & 12) | 29          | 1           | Handle Set (With Item 16)   |
| 11          | 1           | Insulation Washer                           | 30          | 4           | Tapping Screw CT 5x16       |
| 12          | 1           | Ball Bearing 6200DDW                        | 31          | 1           | Spindle Complete            |
| 13          | 1           | Baffle Plate                                | 32          | 1           | Bearing Box                 |
| 14          | 1           | FIELD ASSEMBLY                              | 33          | 1           | Ball Bearing 6203DDW        |
| 15          | 4           | Tapping Screw 4x25                          | 34          | 1           | Retaining Ring R-40         |
| 16          | 1           | Handle Set (With Item 29)                   | 35          | 1           | Spiral Bevel Gear 50        |
| 17          | 2           | Tapping Screw 5x60                          | 36          | 1           | Hex. Socket Head Bolt M5x10 |
| 18          | 1           | Makita Label                                | 37          | 1           | Grip 36 Complete            |
| 19          | 1           | Motor Housing Complete                      | 38          | 1           | Gear Housing Complete       |
|             |             |                                             | 39          | 1           | Pin 8                       |

Note: The switch and other part specifications may differ from country to country.

## MAKITA LIMITED ONE YEAR WARRANTY

### Warranty Policy

Every Makita tool is thoroughly inspected and tested before leaving the factory. It is warranted to be free of defects from workmanship and materials for the period of ONE YEAR from the date of original purchase. Should any trouble develop during this one-year period, return the COMPLETE tool, freight prepaid, to one of Makita's Factory or Authorized Service Centers. If inspection shows the trouble is caused by defective workmanship or material, Makita will repair (or at our option, replace) without charge.

This Warranty does not apply where:

- repairs have been made or attempted by others;
- repairs are required because of normal wear and tear;
- The tool has been abused, misused or improperly maintained;
- alterations have been made to the tool.

IN NO EVENT SHALL MAKITA BE LIABLE FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM THE SALE OR USE OF THE PRODUCT. THIS DISCLAIMER APPLIES BOTH DURING AND AFTER THE TERM OF THIS WARRANTY.

MAKITA DISCLAIMS LIABILITY FOR ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF "MERCHANTABILITY" AND "FITNESS FOR A SPECIFIC PURPOSE," AFTER THE ONE-YEAR TERM OF THIS WARRANTY.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

**Makita Corporation**

3-11-8, Sumiyoshi-cho,  
Anjo, Aichi 446-8502 Japan

884184 — 985

PRINTED IN JAPAN  
1998 — 9 — N